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17. ABSTRACT (MAX. 250 WORDS)

The design of the Heathcote Elementary School was investigated in terms of the school's educational program, architectural innovations in design, and special features of interest.

The planners of Heathcote were committed to two fundamental principles of education -- one dealing with the conditions under which children learn best, the other dealing with the process of learning. The building's design, from its physical attractiveness to the quantity and arrangement of its facilities, flowed from these two educational principles.

The physical specifications developed by the planners were broadly these: a beautiful plant attractive to the eye and pleasing to all the senses; the elimination of institutionalism; the creation of separate small educational neighborhoods for different groups, enabling the child to have a sense of identity with his own group of rooms; the arrangement of the flow of space within the classroom, from building to building, and from indoors to outdoors, in order to allow maximum freedom of movement and a minimum number of rules; the provision for ample spaces, with such fluidity and variety which would be adaptable to the greatest range of activities; the use of interior furnishings and equipment which enable children to control themselves; and the use of the outdoors as a resource center that could be incorporated, as much as possible, into the school itself.

These directives were used by the architects who designed the school. The building was decentralized with central core and separated clusters of classrooms.

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# PROFILES OF SIGNIFICANT SCHOOLS

## HEATHCOTE ELEMENTARY SCHOOL
## SCARSDALE, NEW YORK

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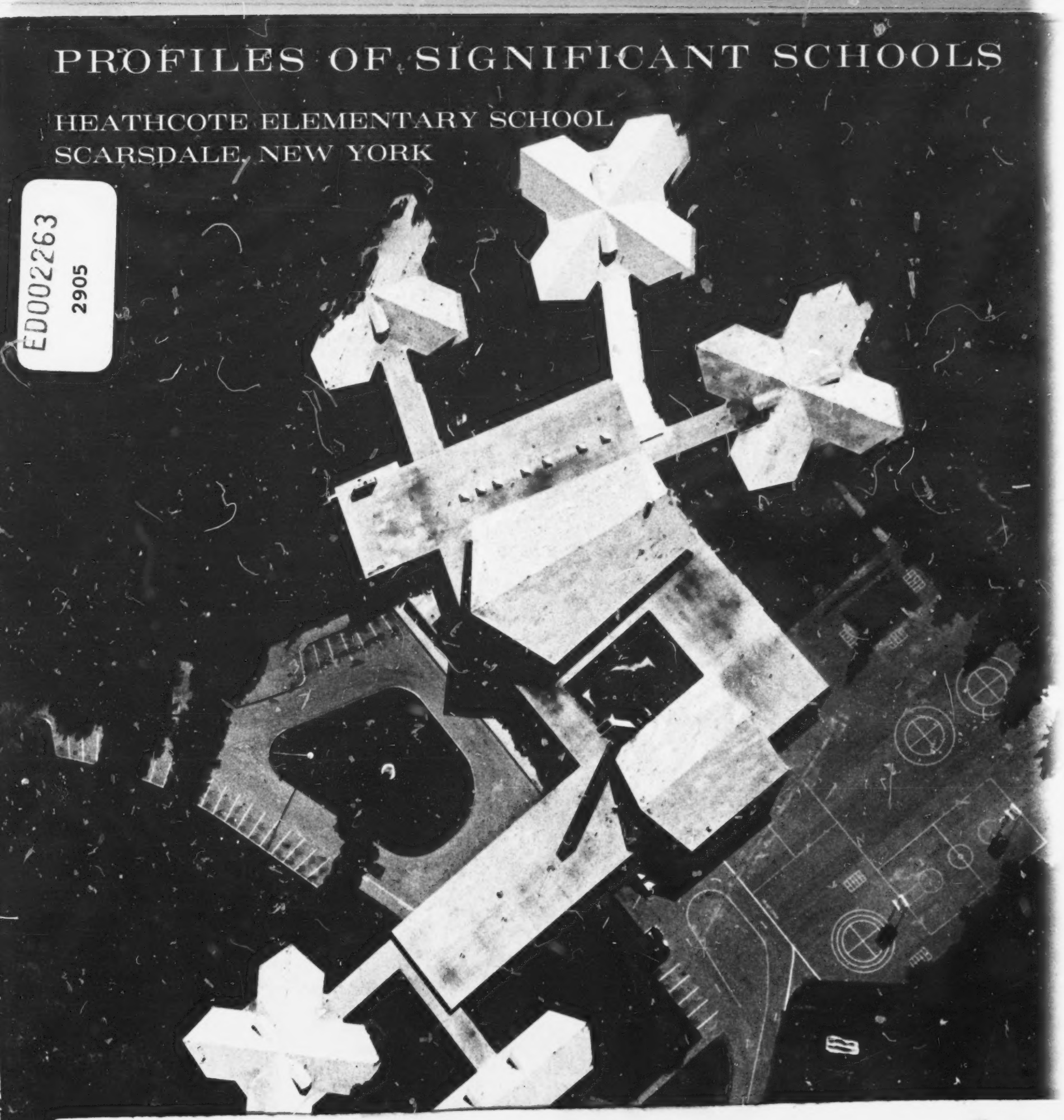

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Profiles of Significant Schools

# H E A T H C O T E  E L E M E N T A R Y  S C H O O L

# S C A R S D A L E ,  N E W  Y O R K

Prepared by
Ruth Weinstock
Research Associate

September, 1960

Educational Facilities Laboratories, Inc.
477 Madison Avenue, New York, New York

J0353

## New Ideas for School Design

Communities all over the United States are building new schools. But not every administrator, architect, and school board member can tour the country looking at the latest developments in school planning and design.

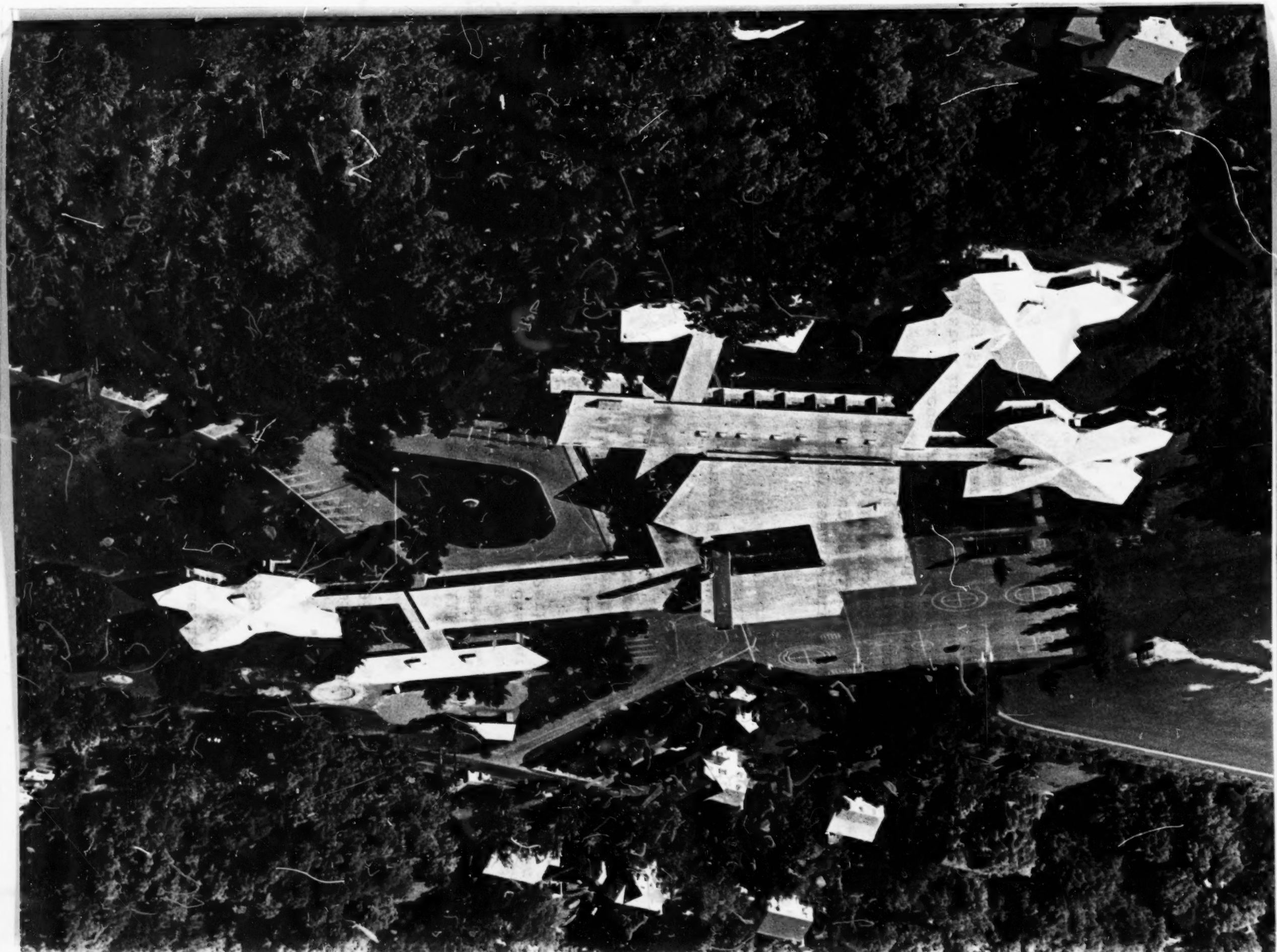
To provide people engaged in school building with a detailed knowledge of the most adventurous new schools, EFL is publishing this series of reports, entitled Profiles of Significant Schools. The reports attempt to show two things: why the school was designed as it was, and how it was designed and built. In order to do this, the Profiles will explore the educational program (which may in itself be unusual), any architectural innovations the design may contain, and any special features that may be of interest, such as air conditioning, flexibility or open planning.

These are Profiles of individual schools, built in individual communities, to house individual programs. These schools will not necessarily serve ideally in other communities, but many of the ideas incorporated in them are applicable in many places. We hope that people involved in school planning and building will find the ideas stimulating and useful.

We would appreciate your reactions to the series as well as suggestions for making future Profiles more useful.

| | |
|---|---|
| School: | Heathcote Elementary School<br>Scarsdale, New York |
| Opened: | September, 1953 |
| Grades: | K - 5 |
| Capacity: | Originally designed for 322 pupils<br>Expanded in 1958 to accommodate a total of 414 |
| Architects: | Perkins and Will<br>Illinois and New York<br><br>In charge of design:<br>Lawrence B. Perkins |
| Superintendent: | Archibald B. Shaw, during planning, design and construction<br><br>Harold Howe,II, present superintendent |
| Principal: | George E. Raab |

Scarsdale is a suburban commuting town twenty miles north of New York City. The community is made up of almost 5,000 families. Annual average income per family after taxes, according to the 1960 Survey of Buying Power, is $16,458. This money is earned for the most part by professional men and business executives who commute to their offices in New York City. Scarsdale supports its educational system in a manner to which few schools are accustomed, spending $1,036 a year on the education of each school child, and paying a median teacher salary of $7,100.

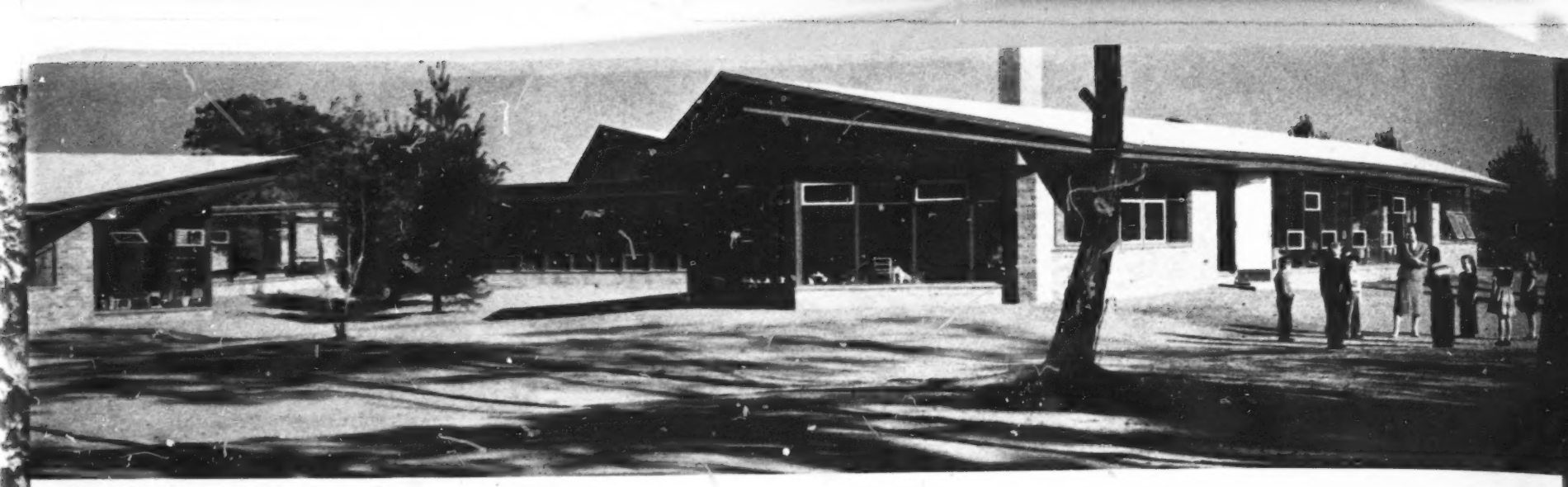


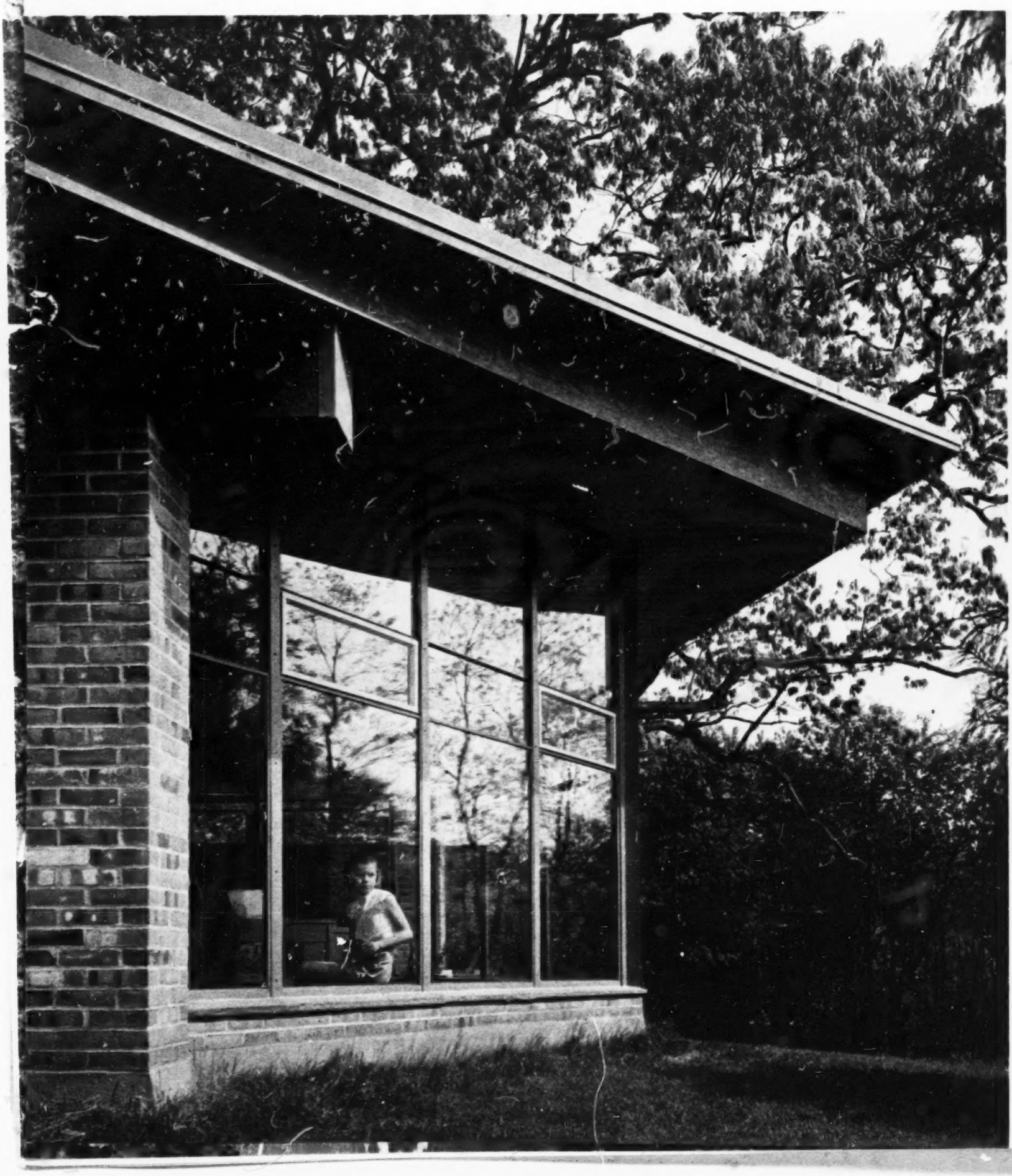
H E A T H C O T E : A school where atmosphere and spaces are tools for teaching

A recent study of Scarsdale's schools by a citizen group begins with this statement: "The Scarsdale community has throughout its history wanted the best in education, and it has generally been willing to pay the costs of having able teachers and excellent school facilities.

Heathcote Elementary School, built in 1953, is an expression of this desire for the best.

Visitors to Heathcote are at once charmed by its appearance. The school is set on 22 acres of rolling, wooded hilltop, in a section of single-family suburban homes. Its six buildings are made of earth-colored brick and natural wood. The designers also used sunshine, light, space, trees, and air as the materials of building. Low-pitched gravel roofs and broad overhangs which make the structure appear to hug the ground set a residential tone and a human scale. So gracefully do the rough-textured walls and horizontal lines of the buildings rise from the site that, like the trees, they seem to belong to it. Still, there is about the school a solidity which sets it apart from the landscape, suggesting shelter and protection. It is this natural flow of color and form, this weaving together of landscape and structure into a harmonious whole, which produces the quiet beauty of Heathcote.





## The Thinking Behind a School Building

It would be a mistake to think that Heathcote is merely the product of a well-to-do community wishing to adorn itself with an outstanding public building. It would equally be a mistake to regard it as the natural, predictable result of adequate building funds, a pleasant site, and skillful designers. It is much more. It is the result of three years of careful planning on the part of educators, the school board, citizens' committees, teachers, parents, and architects all motivated by a single purpose - to produce a schoolhouse that would provide an efficient machine for learning.

Heathcote's planners were committed to two fundamental principles of education - one dealing with the conditions under which children learn best, the other dealing with the process of learning. Everything about the building, from its physical attractiveness to the quantity and arrangement of its spaces, flows from these two educational principles.

## Receptivity, or The School as a Place Children Love

One of the themes from which Heathcote derived its ultimate shape is that receptivity is a cornerstone of the learning process. When a child is receptive or open to learning, he does so on whatever his own level, with relative ease. When he is resistive, the task becomes more difficult.

A child's attitude toward learning can be molded by the atmosphere in which learning takes place. If it is good, if it expresses acceptance, warmth, and a recognition of his individual identity, he will be well disposed and respond positively. School buildings have a way of generating their own atmospheric electricity. This can operate as a force powerful enough to close the doors of a child's mind as he approaches or, like an electric eye, to open those doors.

With this in mind, Heathcote's architects set out to manipulate the school's physical environment so that it could be used as an educational tool, to make children receptive, to make them want to learn. The most direct way to achieve this was to provide a schoolhouse children would love, a place where they would want to be.

It is this concern with subjective responses to environment or, in the words of architect Lawrence B. Perkins, "the in'ards of the child," wherein lies the special meaning of Heathcote's beauty. Architectural Forum (October, 1952), in an appraisal of the school shortly after it was built, put it simply: "Heathcote is a significant school because it digs into the fundamental question of atmosphere."

The amenities at Heathcote, such as this interior court where children can play or hold outdoor classes, are more than mere adornment. They express the school's philosophy that children learn best in an atmosphere they like.

Colored glass panels, placed at random in the corridors, are just for fun. But children are stimulated too, by seeing what the world is like in orange or yellow.

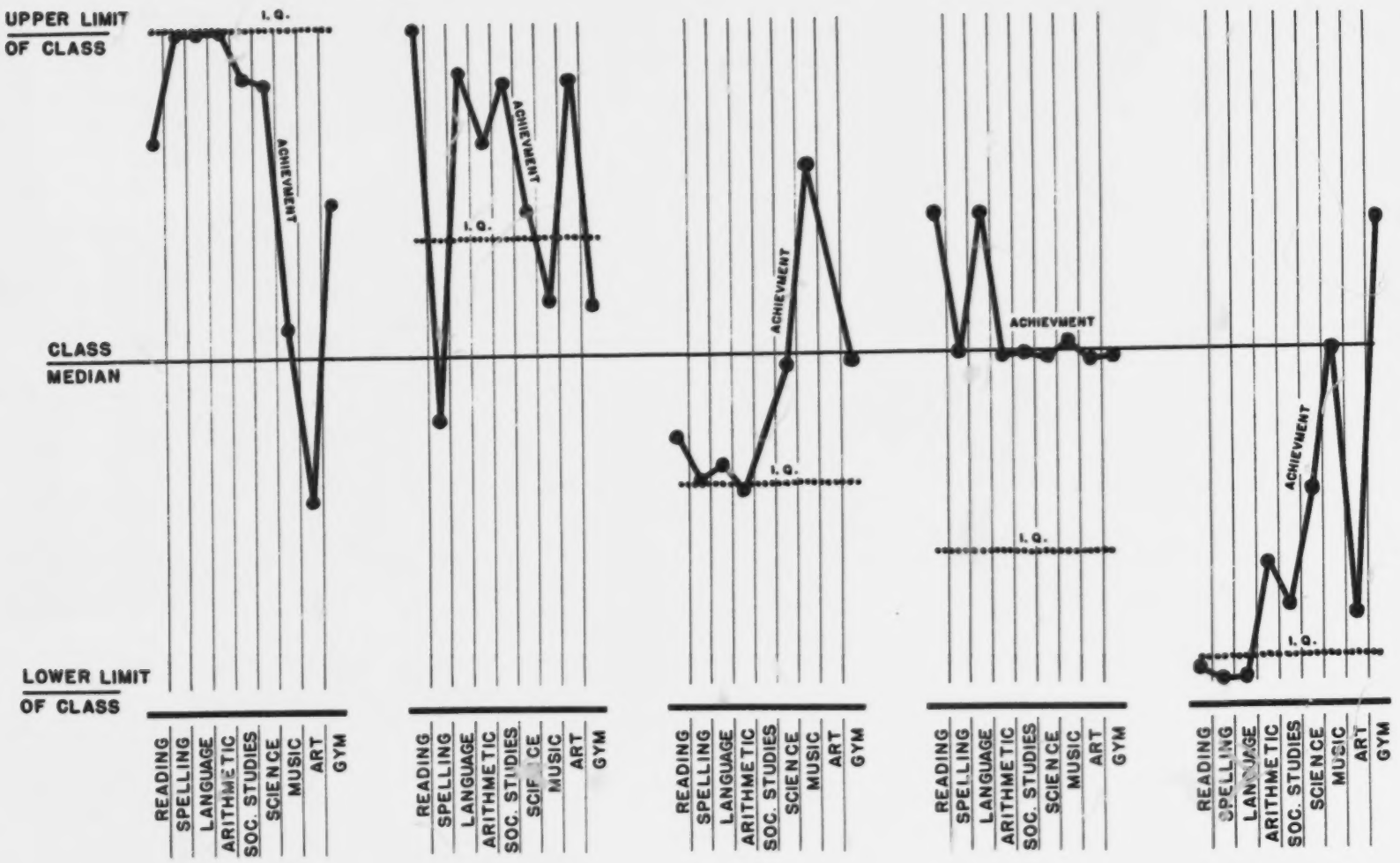
## Individual Differences in the Way Children Learn

The second theme around which Heathcote is built is that each child differs from the next. He is an entity unique unto himself, with his own rate of growth, and his own pattern of learning.

Dr. George Raab, Heathcote's principal, uses a series of graphs like those on page 6, in orientation meetings for new parents. The graphs chart the varied achievement levels of 5 children selected at random from a fourth grade class.

Based on teacher observation of pupil performance and the findings of standardized tests, they illustrate that a child's learning does not progress at the same relative rate in the various curriculum areas.

INDIVIDUAL PERFORMANCE OF FIVE CHILDREN IN A FOURTH GRADE CLASS




Heathcote wanted a school that would recognize the individual learning patterns of children. Thus, each child could be grouped in a way best suited to his own needs. Graphs show how five children of the same grade vary in achievement in different subjects.

Since each child progresses in a subject at his own pace, one classroom will contain children whose ability and performance spans many grades. A fifth grader who reads on a third grade level may be seated next to a classmate who reads on a ninth grade level. At the same time the child who needs help in reading may perform in arithmetic on a seventh grade level and not need remedial but accelerated work in mathematics.

In recognition of this, Heathcote's planners wanted a building that would not force children to be lumped together all day every day for all purposes. For their school to function, in Raab's words, as "an educational diet kitchen which nourishes the differences children bring," the Heathcote school building had to provide ample, fluid spaces to allow great variety and range in grouping children for different purposes.

## The Physical Implementation of Heathcote's Ideas

The physical specifications developed by Heathcote's planners were broadly these:

* A beautiful plant attractive to the eye and pleasing to all the senses.

* The elimination of anything that smacked of institutionalism.

* The creation of separate small educational neighborhoods for different groups, enabling the child to have a sense of identity with his own group of rooms, i.e. a unit larger than the individual classroom but smaller than the school.

* The arrangement of the flow of space within the classroom, from building to building, and from indoors to outdoors, in order to allow maximum freedom of movement and a minimum number of rules.

* The provision of ample spaces of such fluidity and variety that they would be adaptable to the greatest range of activities - from the individual child working alone, to groups of children within a single classroom, to a number of classes engaged in a single project, to the entire school gathered for a single purpose. The spaces also had to meet the needs of the adults who would work with the children during the school year, those who would use it as a community center, and the groups who would be using it for summer recreation programs.

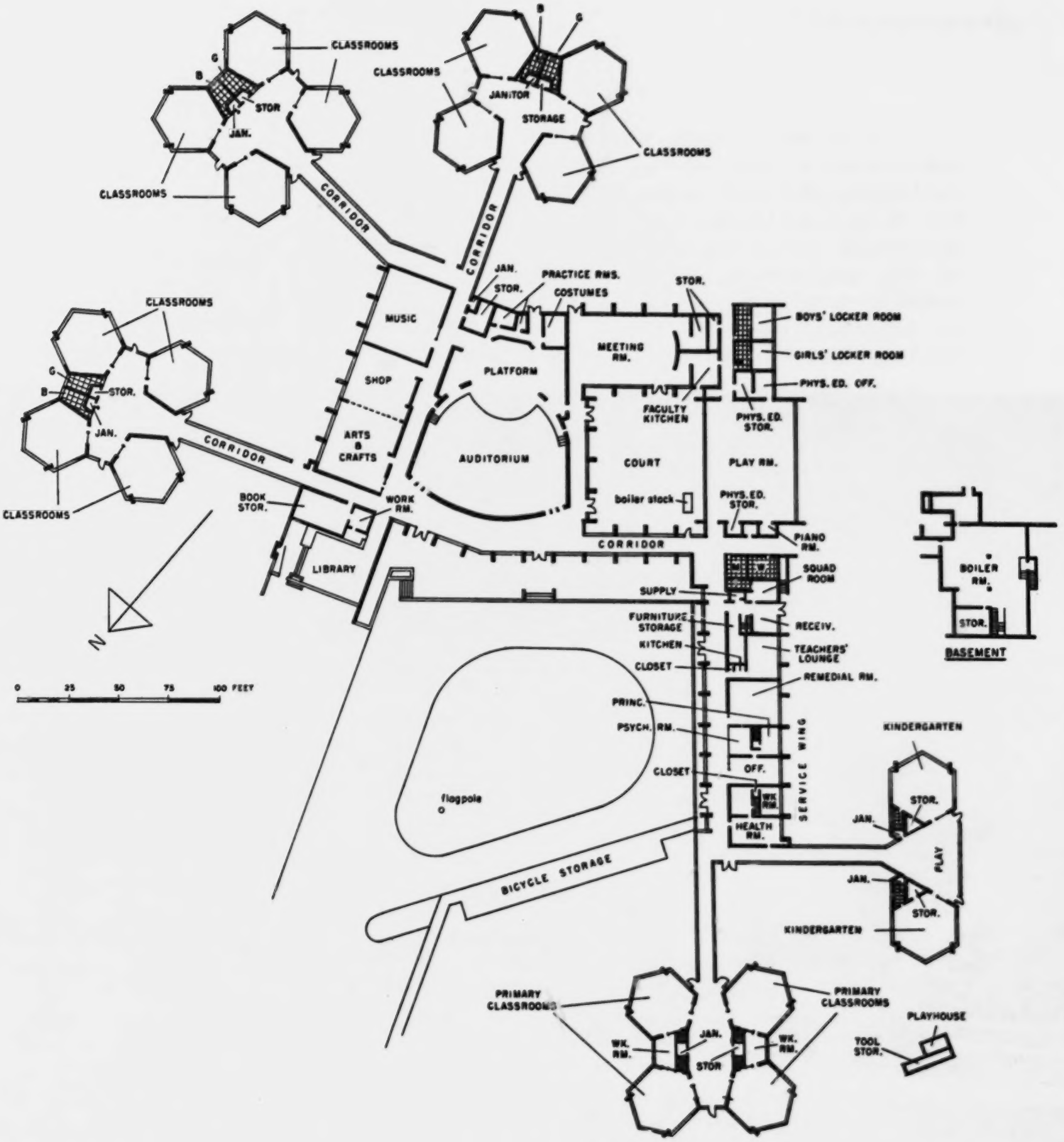
* The use of interior furnishings and equipment that children could control themselves - chairs, desks, electric light switches, toilets, cabinets, crayon boards, etc., to be either movable or of such height that they could be manipulated by the youngsters.

* The use of the outdoors as a resource center that could be incorporated, as much as possible, into the school itself. The plant and animal life, the changing seasons, the special abandon of unenclosed space, were all to be made available to the children as materials of learning.

## The Over-all Plan

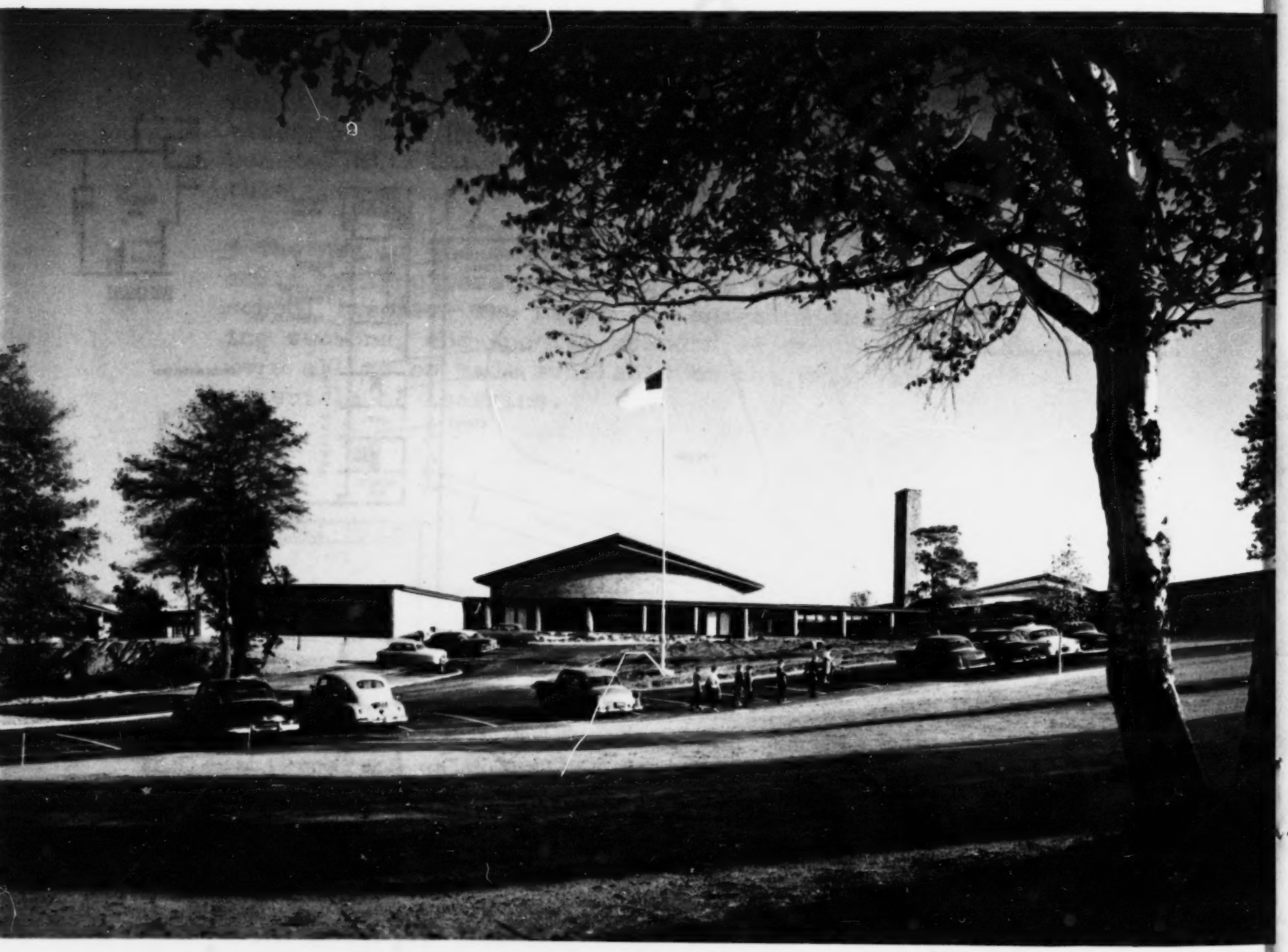
These broad directives were turned over to the architects who proceeded to design a school around them.

First, they took up the matter of institutionalism. In order to counteract the institutional look, they decentralized the buildings. To this end, and to satisfy the specification which called for the creation of educational neighborhoods, they developed a building plan with a central core and separated clusters of classrooms. The core supplies the auxiliary spaces and services to the clusters which branch out from it.




The basic core-cluster of Heathcote provides each age group with its own little school, simultaneously grouping the common activities in the core of the schoolhouse.

In order to keep the plant, which is a large one containing almost 65,000 square feet from being overwhelming, the designers sprawled its buildings over the site's hilltop, reducing the apparent bulk. This spread of small building masses, the low peaked roofs of the buildings, and the background of informal landscaping creates a residential scale. The clusters rest on natural flat shelves of land. Planted trees and stone walls bring the woods up to the buildings.



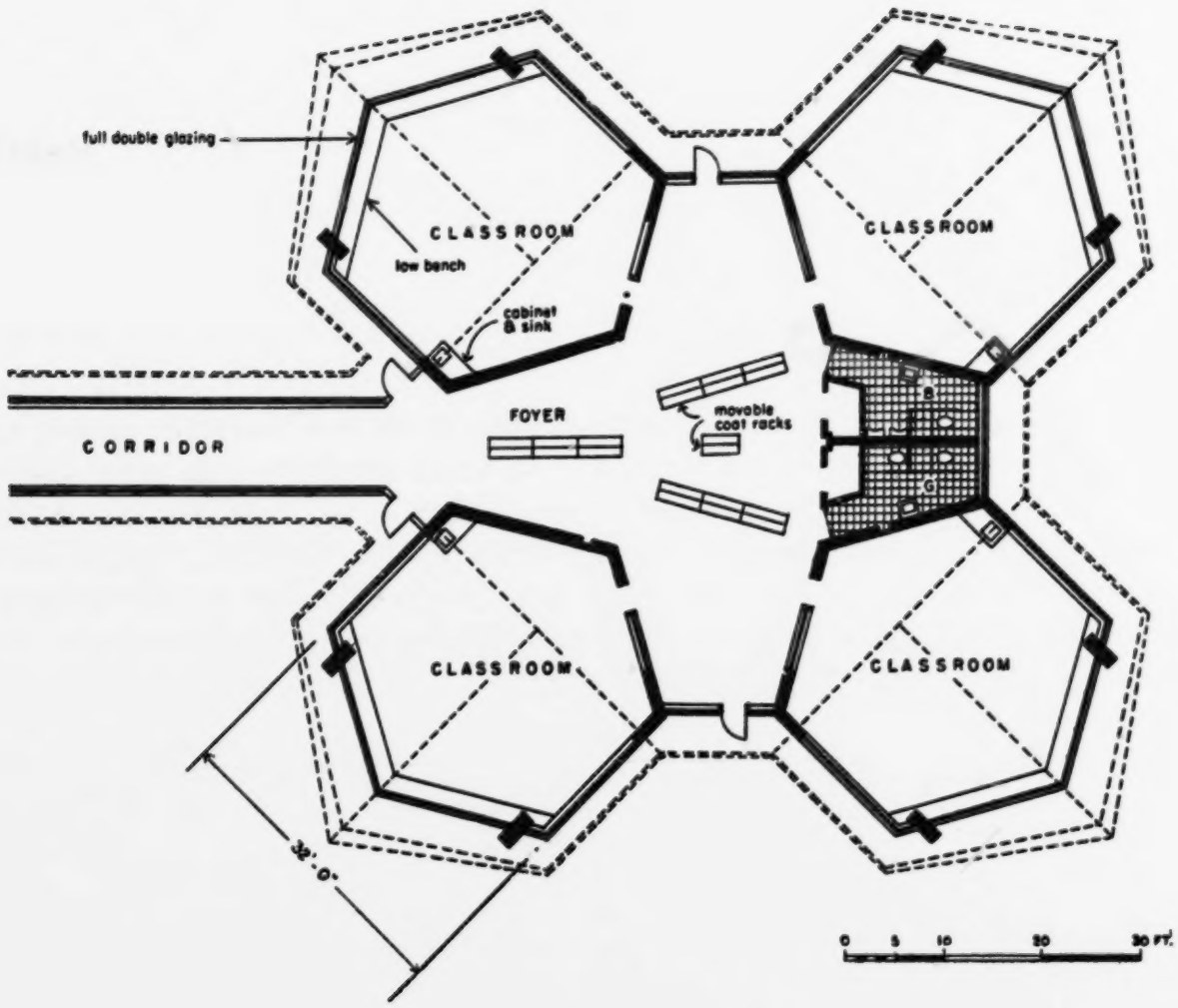
Heathcote's buildings ramble across their site. The entire school cannot be seen from any one place.

## Clusters

Expandability: There are, at present, five separate clusters of classrooms at Heathcote, each with its own special area of the site. The fifth one, added in 1958, five years after the original plant was built, points up one of the important virtues of the cluster plan - its adaptability to expansion. Increased enrollment can be accommodated by the construction of additional classroom clusters without expensive changes in the central service core, or the disruption of activities in the rest of the school.

Educational Zones: The physical separation of the clusters creates zones for different patterns of activity. The one for kindergartners, for example, is placed furthest away from the fifth grade cluster, therefore, the freer and noisier activities of the very young children will not interfere with the quieter work of the older ones. Each cluster becomes its own little school, giving the children an intimate unit with which to identify. Each little school is set up as a place expressly designed for the activities and interests of the children in it. There are four classrooms in each cluster housing children drawn from two grades (except for the kindergarten cluster which has only kindergarten children). Class size is limited to 23 children.

The Six-sided Classroom: Noteworthy are Heathcote's hexagonal classrooms. They are six-sided for two reasons: one, that the typical rectangular or square classroom traps unusable space in the sharply angled corners, while the wider angles of the hexagon provide greater amounts of usable floor and wall area; two, the fact that children learn a great deal from their peers, perhaps, as much as from adults. A space shaped to direct youngsters toward each other has its own subtle educational value. There is no front or back to the classrooms at Heathcote.




Four classrooms in a typical cluster are grouped around a central foyer. It is used in common by all of the classes, and provides a flexible, unifying center for all the cluster activities.

Each classroom contains 887 square feet of space, about average size for the period. However, the rooms seem larger than they are because of the extensive use of glass walls, the high peaked ridges of the ceilings, and the illusion of greater space induced by the hexagon's 120° corners.

Some classrooms have small adjoining spaces where a teacher may conduct an individual lesson, have a private talk with a child, or prepare his own work.

Furnishings: Tables and desks are movable and low, varied in shape, some round, some rectangular, some trapezoidal. There are sinks in the classrooms and window seats along the walls. Two walls are covered with chalkboard and tackboard for display purposes. Wood paneling in the halls is of soft pine to encourage its use as tackboard for displays.

The Central Foyer: The central area in each cluster provides the free space that gives flexibility to each Heathcote cluster. This space serves as the entrance to the small school, as a coatroom with movable coat storage units, as the viewing area for films, since it is more easily darkened than the glass walled classrooms, as a display gallery for art work. A piano and film projector are standard equipment in each foyer. The toilets for the children of the cluster are located here as well.

The free central area at Heathcote provides each cluster with flexible, multipurpose space.

Most important, this space serves as an area where two or more classes, through the cooperative planning of teachers, can be brought together for a variety of activities. These may range from joint class lessons (leaving a teacher free to work with a small group inside the classroom), to a movie, committee project work, or informal full-cluster assemblies which at Heathcote are called "wing dings." Moreover, the foyer creates an opportunity for children of two consecutive grades to mingle and work together.

In addition, the center serves as a recreation area in bad weather. In the kindergarten cluster this space is larger than in the other clusters, and is fully equipped for use as an indoor play yard.

## The Core

Heathcote's central building contains the school's largest units - the auditorium, gym, meeting room, arts-crafts-music-shop rooms, library, skills laboratory, teacher's kitchen and lounge, and administrative offices. This part of the school, large as it is, has the same intimate scale as the clusters. Since it is spread out and broken into separate but connected sections, it is not overwhelming. The sections are connected with glass walled, ramp-like corridors that follow the slope of the ground. The most arresting feature of this building is the curved upper front of the auditorium with its peaked roof. Beneath this sheltering overhang the brick walls flow easily into the brick piers and glass of the corridor which runs along the front of the building.

The Auditorium: The auditorium is the heart of the central building. It is not so much an auditorium as a children's theater. However, it was also designed to be used at night for adult gatherings. The semicircular, 36-foot-deep stage extends out into the seating area, bringing the children on stage and those in the audience closer together. A hard plaster acoustic baffle above

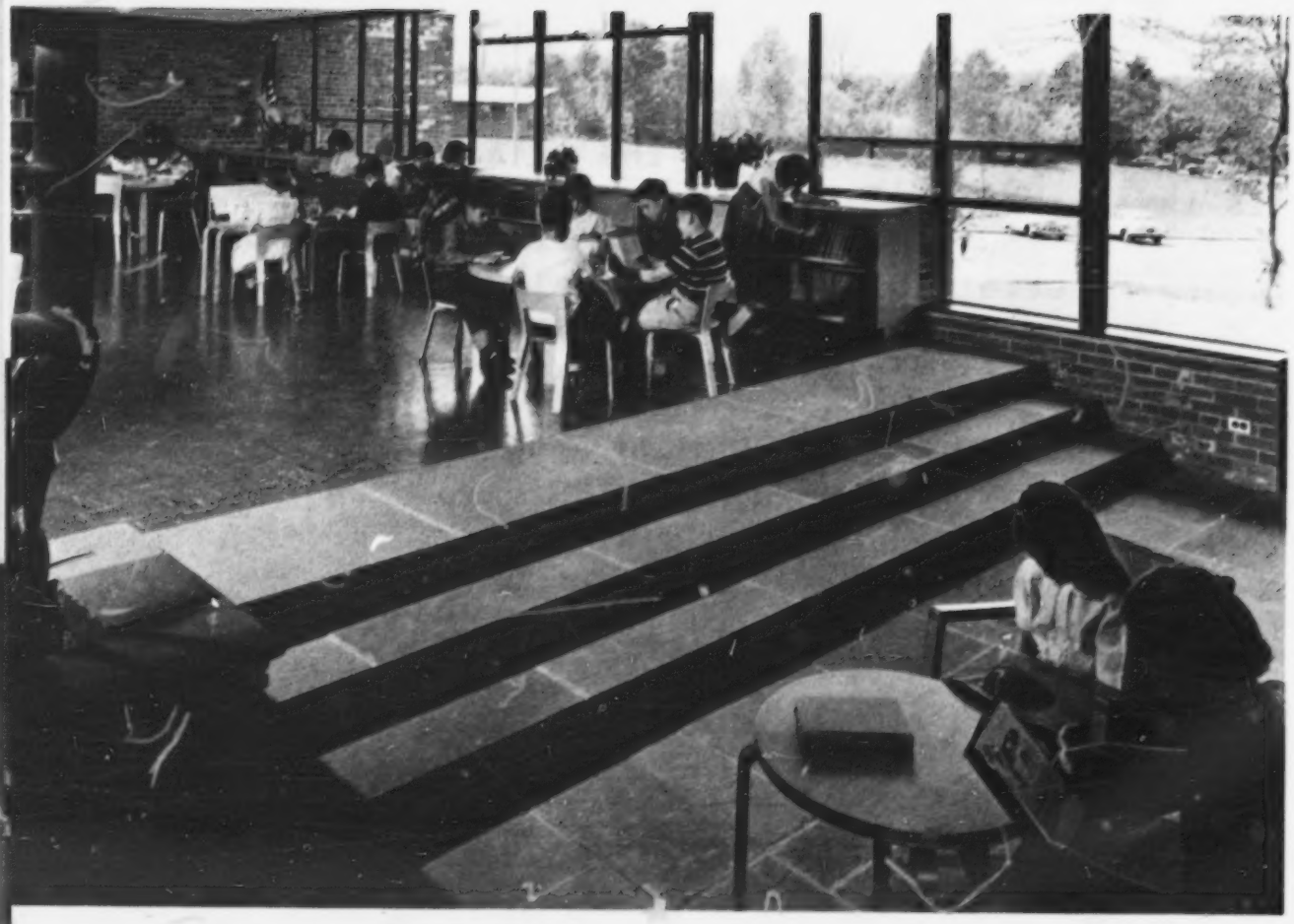
the stage reflects the somewhat timid sound of children's voices to the back of the auditorium. The size of the stage is controlled by curtains. Just off the auditorium are shop, arts and crafts, music and instrumental practice rooms.

The Library: Directly connected with the arts area is the library. This is a large, two-level work-reading room. The levels are created by rough stone steps and indoor plants. The textured building materials of floors and walls create such warmth that no further decoration is necessary. Just the same, books and work materials are set out with the sort of marketing acumen that goes into a department store Christmas display. On the upper work level, in addition to shelves of books, there are film strips, recordings with earphones, magazine picture files, and the librarian's work room. Furnishings consist of round tables for joint work on reports, rectangular tables for individual reading, and tackboard for displays. Children sit on the steps for discussions with the librarian.

The lower level is for relaxed, comfortable reading. It has window seats and stacks of brightly colored pillows on which the children may sit or sprawl while reading in front of the fireplace.

Atmosphere here is not hush-hush, and the youngsters are given a great deal of freedom. Though library periods are scheduled for all classes from kindergarten up, it is open all day to everyone, including parents. It serves as a source from which many activities emanate and is an artery of information and fun for the entire school.

The Skills Laboratory: Adjoining the administrative wing of the core building is a room Heathcote calls its Skills Laboratory. This room typifies Heathcote's program of individualized attention. All teachers are free to send any child who needs remedial assistance, additional academic challenge or who wishes to pursue a special interest. A youngster interested in creative writing, for example, or science, may have the lab work out a program for him that will allow intensified instruction for 40 minute periods several times weekly. The lab, in working out a tailor-made program for a child, may operate as follows.



Heathcote's library is a two-level room. Project work and study goes on on upper level.

Lower level for relaxed, comfortable reading has fireplace for use on gloomy days.

A second grader, too advanced for second grade work, was accelerated and placed for a two-week trial period in a third grade class. There, however, he could not settle down, and displayed a lack of the maturity necessary to fit in with the older children. Solution: He was returned to the second grade class from which he had come, but to keep him intellectually challenged he was assigned to the skills lab every afternoon for special work.

Other Core Spaces: The administrative offices for the principal, nurse, and school psychologist, as well as a teachers' kitchen and lounge are located in the central building. (Children go home for lunch.) Together with the skills laboratory, these spaces form a special wing in the core for the school's administrative and guidance functions.

Additional core spaces include a meeting room equipped for TV reception, used for P.T.A. and staff meetings (it also has a ping-pong table for teachers), and a small size gymnasium or playroom.

The landscaped courtyard of the core building not only helps to provide physical separation for its various sections, but also lets in light, air, greenery, and makes for a sense of well-being.

## Construction, Materials, and Form

The forms the architects selected for Heathcote, and the materials used in the construction of these forms are responsible for the final results - a physical environment that spells out hospitality to children.

Construction: Cluster walls are of solid brick and brick with concrete block. Heavy brick piers support the cluster roofs. Laminated wood beams resting on these piers in turn support laminated wood arches. The arches

are concealed by 1 by 4 inch wood siding used for finish on the slanted sections of the ceiling. The function of these arches is to make possible the high ridges in the middle of the classroom ceilings without center columns for support.

Classrooms have a feeling of openness, of easy transition between interior and out-of-doors. A number of factors contribute to this: One is the high, slanted ceilings (in sharp contrast to the low ceilinged center foyers giving the foyers the quality of cozy, shaded retreats). Another is the glass walls that reach almost to the ground and are pushed out beyond the frame of the building itself. Trees and grass protect the rooms from glare.

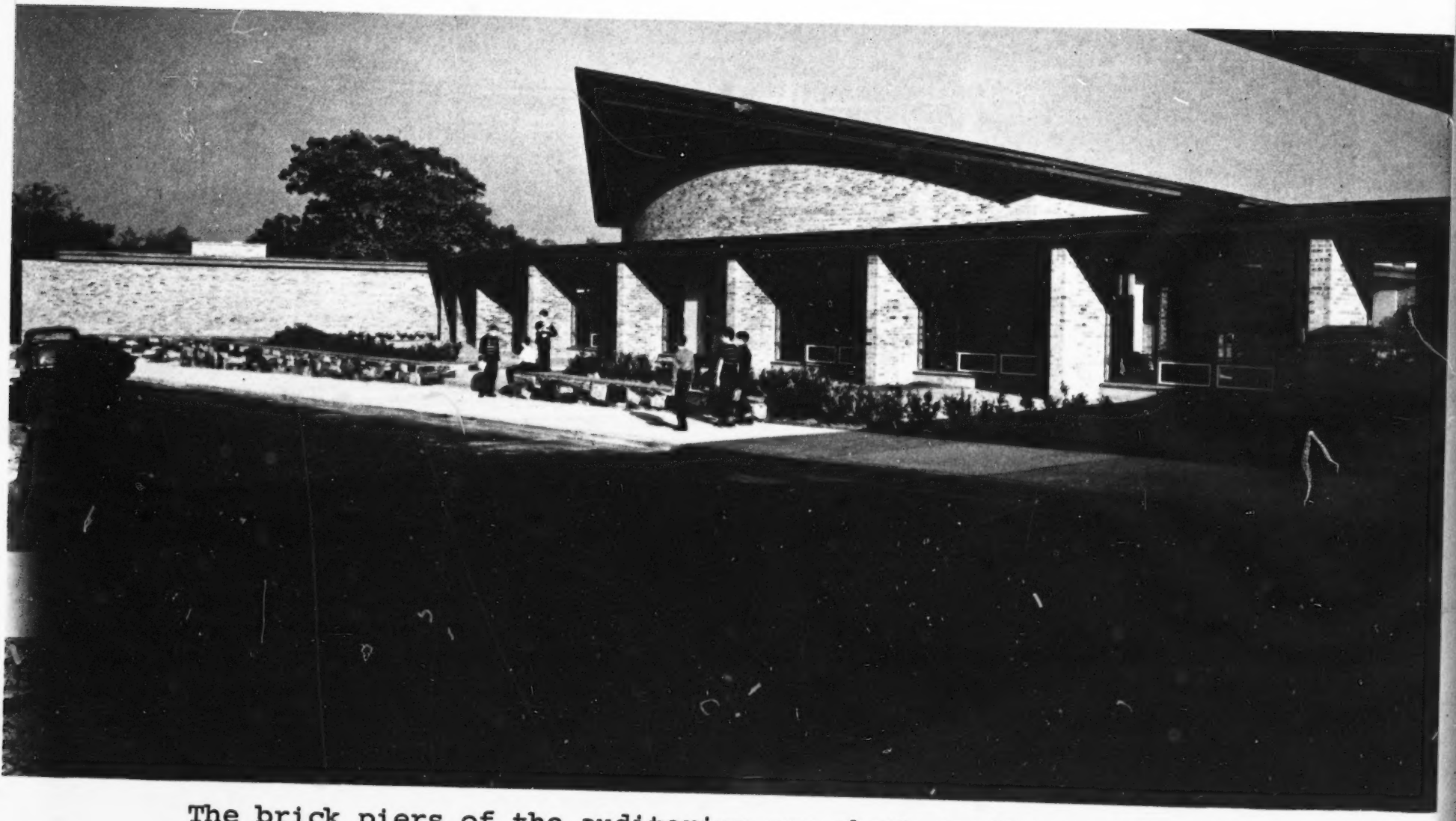
White concrete foundations are kept low to the ground to minimize the contrast between buildings and ground.

Though the centers of the ceilings are high, the low pitch of the roofs, the broad overhangs, and the nearness of the roof edges to the ground contribute to the visual reduction of height and scale. Emphasis on roofs rather than walls is deliberately planned to convey a feeling of shelter rather than enclosure. (Heathcote architect Perkins compares the classroom space created by the pitch of the roofs to the space under a tree.)

Corridors to the clusters are of steel frame construction with fireproof gypsum roofs. The distance of the classroom clusters from the main body of the school made their fireproofing unnecessary.

Hovering over the central core building, and visible from almost anywhere on the school grounds is the pitched auditorium roof. This core structure is rigid steel frame in part, and bar joists. It is consistent with the clusters in scale, form, and materials. Deep oversized brick piers extending

from the nearly all-glass walls, add solidness and shelter to openness.



The brick piers of the auditorium are rhythmically repeated in all the buildings. They support the roofs and serve as sun shades as well.

Materials: Glass, brick, and natural wood are the major materials of the buildings. Colored glass panes and painted panels randomly placed, supply gay accents. There is no plaster anywhere in the building, other than the auditorium ceiling where it is used as an acoustic baffle. Aside from considerations of design, carrying the exterior materials through to the interior surfaces provides the benefit of low maintenance costs. Windows

are double glazed so the children will be comfortable when they sit near them in the winter. Radiant panel floor heating keeps the green composition floor surfaces warm as well as the air.

## How Heathcote Has Worked

Heathcote is seven years old. In the opinion of the people who use it, the concepts behind the building have been successfully achieved.

Children love the school, so much so that the administration has had to organize campaigns to keep them from coming too early in the morning. The staff still has difficulty getting the children to leave the grounds when the day is over. One parent informed the writer that the youngsters regard it as punishment when they are kept home because of illness. (This says something about the staff as well as the building.)

Academic Achievement: Scarsdale is a community with high academic standards and expectations, and its educators point with pride to the academic record of its schools. In 1959, a typical year, 93 per cent of its youngsters went on to college. In the 1959-60 National Standard Achievement Tests, Scarsdale's elementary grades not only exceeded the national public school norms but the national independent school norms as well. (These are composite tests which include reading, spelling, language, social studies, arithmetic, and science.) Heathcote, designed to be a joyous place for children, has produced a level of academic achievement consistent with the high quality of the entire district. Indeed, experience there has reinforced the view of Scarsdale's educators, who believe that learning occurs best and lasts longest when there is intense enthusiasm for it, and when children are given a maximum of individual attention.

Heathcote is regarded as one of Scarsdale's most successful schools.

Teacher Recruitment: The building has drawn teachers to it. This is a physical atmosphere in which they want to work. The school has enjoyed a marked success in attracting teachers in a period when teacher recruitment has been a serious problem everywhere. This year there were over 100 applicants for the job of physical education teacher (among whom numbered football and Olympic stars, and college physical education instructors).

The music teacher, a woman with a national reputation in her field, who had given up teaching to devote her time to a children's television program, came to Heathcote on a part-time, limited basis but stayed to work full time.

Even the opening for school secretary, where Heathcote could not compete with private business in the salary it could pay, had 65 applicants.

The Community: Heathcote seems to have had a magnetic quality for parents as well. It has become a center for after-hours work and recreation. Many parents take an active part in assisting teachers on projects and trips. Membership in the PTA approaches 100 per cent.

The school has also had an economic effect on the community. According to former Superintendent Shaw, it has added about $5,000 to the value of each home in the Heathcote district.

The Impact of Building on Program: What is most important about Heathcote is that the design of its building has had a significant effect on the program it houses.

The clusters with their shared central spaces have encouraged teachers to confer and work out cooperative uses of their teaching time and their individual talents.

There has been too, a trend toward new freedom in grouping children. The cluster arrangement makes it

possible to move children from one class to another, crossing grade lines depending upon each child's needs and capacities at a given moment, with far greater ease than is possible in a traditional building.

Thus Heathcote's design has made possible - and actually encouraged - a move in the direction of ungrading the classes, and the establishment of a team approach to teaching.

This is a school which need not fear change. We are in a time when educational ideas, methods, and values are being subjected to scrutiny. Heathcote, with its various spaces, can enjoy a cheerful confidence that whatever new ideas may grow out of the current educational appraisal, its building can be adapted to keep step. Heathcote is living dynamic architecture.

## Cost

Heathcote is a costly building as the following figures will show. Its high cost is largely due to its fine quality of materials and workmanship, its liberal supply of facilities and its use of space. Scarsdale wanted an extraordinary school and was in a position to pay for it. This does not mean that other less prosperous communities whose educational point of view is similar to Heathcote's, but whose exchequer is not, need be prohibited from considering similar buildings for themselves. Heathcote's ideas can be incorporated into more modest, more economical schools. It is not so much the details, though they are exquisitely executed at Heathcote, as the basic design principles - the organization of space, the zoning of clusters, the flexibility, and the integration of the school into its environment - that makes this a paragon among elementary school buildings. These principles are not intrinsically expensive.

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In its original 1953 form, Heathcote contained 57,744 square feet of space. It cost $1,087,320, exclusive of site and site development, auditorium seats and stage equipment, and any movable equipment, but including change orders, chalk and tackboards, and lockers (and the flagpole). This gave it a 1953 cost per square foot of $18.83 and a 1953 per pupil cost, for 322 pupils, of $3,377.

In order to gain some idea of what Scarsdale was getting for its $18.83 per square foot, Heathcote's planning committee asked for a comparison between Heathcote and another Scarsdale school, Fox Meadow. This is a three story compact building erected in 1928 for approximately the same number of children, and a model school for the time. With additions to bring Fox Meadow up to Heathcote in size, the older school would have cost $22.07 per square foot to reproduce in 1953.

In 1958 a fifth cluster of four classrooms was added to Heathcote. At the same time, parts of the central building were remodeled. The addition and the remodeling cost $177,014 and raised the capacity by 92 pupils. The architects estimate that if Heathcote were to be reproduced now, the school would cost between $20 and $22 per square foot. This figure is based on an average 3 per cent rise in building costs in 1953.

## COST BREAKDOWN
(excludes 1958 addition and alterations)

| | | Cost | % of total* |
|---|---|---|---|
| **SITE** | | | |
| Site Work (Excavation) | | $ 65,000 | 6% |
| **BUILDING SHELL** | | | |
| Footings, Foundations & Floors (Concrete, reinforcing steel) | | 129,000 | 12% |
| Structural Frame (Structural steel & wood beams) | | 156,500 | 15% |
| Roof Deck | | 30,000 | 3% |
| Roofing and Flashing | | 33,500 | 3% |
| Walls and Partitions | | | |
| Masonry | $134,854 | | |
| Metal Partitions | 1,750 | | |
| Glass, Glazing & Windows | 48,000 | | |
| Doors & Hollow Metal | 8,500 | | |
| Miscellaneous Metal | 5,000 | 198,104 | 18% |
| **FINISHING & EQUIPMENT** | | | |
| Interior Finishing (Tile, painting, plastering, finish carpentry, millwork, flooring, hardware & acoustic treatment) | | 106,250 | 10% |
| Plumbing | | 67,842 | 6% |
| Heating and Ventilating | | 129,213 | 12% |
| Electrical Wiring & Fixtures | | 98,899 | 9% |
| Miscellaneous Equipment | | 5,500 | 1% |
| **OVERHEAD** | | | |
| Contractor's Job Overhead (Bond, General Conditions & insurance) | | 56,000 | 5% |
| TOTAL COST | | $1,075,808 | |
| Add: Difference of Change Orders | | 11,512 | |
| TOTAL COST (with C. O.'s) | | $1,087,320 | |

* Based on Total Cost without Change Orders.

## AREA BREAKDOWN
(includes 1958 addition)

| | Square Feet | Sq. Ft./* Pupil | Square Feet | Sq. Ft./* Pupil |
|---|---|---|---|---|
| **EDUCATIONAL AREAS** | | | | |
| Regular Classrooms | 14,004 | 33.8 | | |
| Foyers | 3,843 | 9.3 | | |
| Small Group Rooms | 330 | 0.8 | | |
| Skills Laboratory | 550 | 1.3 | | |
| Art Room, Shop and Music Classroom | 3,183 | 7.7 | | |
| | | | 21,910 | 52.9 |
| **AUXILIARY AREAS** | | | | |
| Gymnasium & Lockers | 3,108 | 7.5 | | |
| Auditorium & Stage | 6,118 | 14.8 | | |
| Administration | 2,125 | 5.1 | | |
| Music Practice Rooms | 162 | 0.4 | | |
| Library | 1,886 | 4.6 | | |
| Other: Meeting Room, | 1,972 | 4.8 | | |
| Kitchen | 256 | 0.6 | | |
| | | | 15,627 | 37.7 |
| **SERVICE AND STRUCTURE** | | | 21,970 | 53.1 |
| **TOTAL ENCLOSED AREA** | | | 59,507 | 143.7 |
| 9,398 sq. ft. covered, unenclosed @ ½= | | | 4,699 | |
| | | **TOTAL** | 64,206 | |

* All square feet per pupil figures are computed by dividing the various areas by 414 pupils. Because these figures are rounded off, column totals may not be the same as the over-all square feet per pupil figures.

PHOTOGRAPHY CREDITS

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ARCHITECTURAL DRAWINGS

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Montrose Elementary School, Laredo, Texas
Public School No. 9, Borough of Queens, New York City

Two Saginaw Middle Schools, Saginaw, Michigan

A & M Consolidated Senior High School, College Station, Texas
Hillsdale High School, San Mateo, California
Newton South High School, Newton, Massachusetts
North Hagerstown High School, Hagerstown, Maryland
Rich Township High School, Rich Township, Illinois
Wayland Senior High School, Wayland, Massachusetts